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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/975,764	10/09/2001	Harry Dwyer	Dwyer 5-13	9496
7590	08/03/2004		EXAMINER	
Ryan, Mason & Lewis, LLP Suite 205 1300 Post Road Fairfield, CT 06430			LANE, JOHN A	
			ART UNIT	PAPER NUMBER
			2188	

DATE MAILED: 08/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No.		Applicant(s)	
	09/975,764		DWYER ET AL.	
	Examiner		Art Unit	
	Jack A Lane		2188	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05/05/04.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office action is responsive to the amendment filed 05/05/04. Claims 1-36 are presented for examination. Any objections or rejections made in the previous office action not specifically repeated below are withdrawn.
2. The examiner requests, in response to this Office action, any reference(s) known to qualify as prior art under 35 U.S.C. sections 102 or 103 with respect to the instant claims. That is, any prior art (including any products for sale) similar to the instant claimed invention that could reasonably be used in a 102 or 103 rejection. This request does not require applicant to perform a search. This request is not intended to interfere with or go beyond that required under 37 C.F.R. 1.56 or 1.105. This request may be fulfilled by asking the attorney(s) of record handling prosecution and the inventor(s)/assignee for references qualifying as prior art. A simple statement that the query has been made and no prior art found is sufficient to fulfill the request. Otherwise, the fee and certification requirements of 37 CFR section 1.97 are waived for those documents submitted in reply to this request. This waiver extends only to those documents within the scope of this request under 37 CFR, section 1.105 that are included in the application's first complete communication responding to this requirement. Any supplemental replies subsequent to the first communication responding to this

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request and any information disclosures beyond the scope of this request under 37 CFR section 1.105 are subject to the fee and certification requirements of 37 CFR section 1.97. In the event prior art documentation is submitted a discussion of relevant passages, figs. etc. is requested. **A response to this inquiry is greatly appreciated.**

The examiner also requests, in response to this Office action, support be shown for language added to the claims on amendment. That is, indicate support for newly added claim language by specifically pointing to page(s) and line no(s) in the specification and/or drawing figure(s). This will assist the examiner in prosecuting the application.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. § 103 (a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 C.F.R. § 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the

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applicability of potential 35 U.S.C. § 102(f) or (g) prior art under 35 U.S.C. § 103(a).

4. Claims 1-36 are rejected under 35 U.S.C. § 103(a) as being unpatentable over the admitted prior art in view of Malamy et al. (Pat. No. 5,353,425).

The admitted prior art found on pages 1-3 of the present specification teaches a cache for storing a plurality of frames from main memory. The claimed step of "locking frames if a task is interrupted by another task" corresponds to the locking of an executing task's frames prior to an interruption from another task's execution (page 2, lines 8-10). However, locking a frame or frames in accordance with a most recently used scheme is not discussed.

Malamy is introduced as teaching locking pages or blocks in a cache in accordance with a most recently used locking scheme. As shown in figure 4c an MRU bit (essentially a lock bit) locks a cache line or lines in accordance with a most recently used locking scheme. This scheme increases operating speed, requires less complex logic than a LRU scheme and does not require much high-speed cache memory to implement (col. 3, lines 6-13).

Because the most recently used locking scheme of Malamy provides for an increase in operating speed and reduction in complexity it would have been obvious to use such a locking scheme to lock the frames/block/pages/lines of the cache device of the admitted prior art. Therefore, the claimed invention would have been obvious to one of ordinary skill in the art at the time of the invention.

The examiner believes most, if-not-all, dependent claim features are taught by the admitted prior art and/or Malamy. However, in the event claim features are not expressly or inherently taught by the applied art applicant should consider the claim features in light of the Official notification put forth below.

Official notice is taken of the prior art caching devices including well known locking circuitry teaching any claim feature not specifically discussed above. That is, any prior art (including that of record) teaching the more well known claim features commonly found in the dependent claims. The claim features, while part of the invention, appear to be well known and their relevance not essential to the main invention found in the independent claim(s). Thus, a detailed discussion of the well known claim features is not warranted at this time. Because cache devices including locking circuitry are well known to improve cache performance, it would have been obvious to use prior art cache locking circuitry in the admitted prior art and/or Malamy in order to improve their cache performance. Therefore, the claimed invention would have been obvious to one of ordinary skill in the art at the time of the invention.

In the Remarks filed 05/05/2004, applicant argues:

Independent claims 1 and 29, as amended, require locking a number of most recently used frames associated with a task. Malamy, therefore, actually teaches away from the present invention by teaching to block the replacement of the most recently used cache lines regardless of the task they are associated with.

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In response, applicant has not considered the admitted prior art as found in the 103 rejection above and discussed in the present specification. As found at page 2, lines 8-10 of the present specification, the locking of an executing task's frames prior to an interruption from another task's execution is a well known function. Thus, the combination of the admitted prior art and Malamy teaches locking most recently used cache lines/frames associated with a task. Applicant should reconsider the admitted prior art found in the present specification.

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 C.F.R. § 1.136(a).

6. A SHORTENED STATUTORY PERIOD FOR RESPONSE TO THIS FINAL ACTION IS SET TO EXPIRE THREE MONTHS FROM THE DATE OF THIS ACTION. IN THE EVENT A FIRST RESPONSE IS FILED WITHIN TWO MONTHS OF THE MAILING DATE OF THIS FINAL ACTION AND THE ADVISORY ACTION IS NOT MAILED UNTIL AFTER THE END OF THE THREE-MONTH SHORTENED STATUTORY PERIOD, THEN THE SHORTENED STATUTORY PERIOD WILL EXPIRE ON THE DATE THE ADVISORY ACTION IS MAILED, AND ANY EXTENSION FEE PURSUANT TO 37 C.F.R. § 1.136(a) WILL BE CALCULATED FROM THE MAILING DATE OF THE ADVISORY ACTION. IN NO EVENT WILL THE STATUTORY PERIOD FOR RESPONSE EXPIRE LATER THAN SIX MONTHS FROM THE DATE OF THIS FINAL ACTION.

**Any response to this final action should be mailed to:
Box AF**

Under Secretary of Commerce for Intellectual Property and Director
of the United States Patent and Trademark Office
PO Box 1450

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Alexandria, VA 22313-1450

or faxed to:

(703) 872-9306, (for Official communications intended for entry)

Or:

(703) 872-9306, (for Non-Official or Draft communications, please label "Non-Official" or "DRAFT")

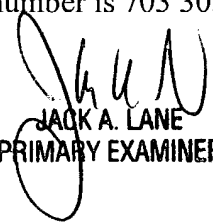
Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jack A. Lane whose telephone number is 703 305-3818. The examiner can normally be reached on Mon-Fri from 7:30AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mano Padmanabhan can be reached on 703 306-2903.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 305-3900.


JACK A. LANE
PRIMARY EXAMINER